

Pison antiquum, a New Species from Dominican Amber (Hymenoptera: Sphecidae)

ALEXANDER V. ANTROPOV AND WOJCIECH J. PULAWSKI

(AVA) Zoological Museum, Moscow State University, Herzen Street 6, Moscow 103009, Russia;
(WJP) Department of Entomology, California Academy of Sciences, Golden Gate Park, San
Francisco, California, 94118, USA

Abstract.—*Pison antiquum*, a new species from Dominican amber presumably of the Oligocene or Upper Eocene age, is characterized by a broad face, prominent middle clypeal lobe, and propodeum with no longitudinal or oblique carinae on dorsum but with a carina between the gastral articulation and spiracle. The species resembles members of the *euryops* group of Menke, 1988, in most characters, but differs in having a tooth on the inner mandibular margin, the occipital carina interrupted mesoventrally, a large, transverse pronotal pit, and recurrent vein I ending on submarginal cell I.

We previously described *Pison electrum* from Baltic amber (Antropov and Pulawski, 1989), and this paper deals with a new species from Dominican amber. The only other fossil *Pison* are *cockerellae* Rohwer, 1908, from shale beds of Florissant, Colorado, now believed to be Lower Oligocene (Wilson, 1978), and *oligocenum* Cockerell, 1908 (= *oligocaenum* Cockerell, 1909), from Baltic amber. The morphological terminology used here is based on Bohart and Menke (1976), but we mainly follow Michener and Fraser (1978) in their use of mandibular terms. The upper and lower interocular distances, abbreviated UID and LID, respectively, are as defined by Menke (1988).

The specimen was examined under a stereomicroscope in a thick sugar solution rather than immersion oil in order to minimize the possibility of damage.

Pison antiquum

Antropov and Pulawski, new species

Name Derivation.—*Antiquum*, a Latin neuter adjective meaning old, antique.

Material Examined.—Holotype: a nearly complete specimen in Dominican amber (personal collection of George O. Poinar,

Jr, Type H-10-15, currently at Oregon State University, Corvallis, Oregon). Missing are: apical half of right foretibia, right foretarsus, left midtarsomeres III-V, and small apical portion of forewings.

Collecting Site and Geological Age.—The specimen came from one of the mines in Cordillera Septentrional between Santiago and Puerto Plata, Dominican Republic. The age of amber in that region varies from approximately 25 to 40 million years, i.e., from Oligocene to upper Eocene (Lambert, Frye, and Poinar, 1985; Poinar, 1992).

Generic Characters.—The specimen is easily recognized as a *Pison* because of the overall body shape; inner orbits emarginate; mandible not carinate between adductor swelling and apex of condylar ridge; sterna without visible or exposed graduli; forewing with three submarginal cells (second petiolate); and apex of marginal cell acutely angulate.

Comparison with Fossil Species.—We previously studied types of *electrum* and *cockerellae* (Antropov and Pulawski, 1989), but the unique specimen of *oligocenum* (probably lost with most of the Königsberg col-



Figs. 1 and 2. Photographs of *Pison antiquum*. 1, dorsal view. 2, ventrolateral view.

lection at the end of World War II) is known solely from Cockerell's descriptions (1908, 1909). We have found the following differences from these species. In *antiquum*, the flagellomeres are markedly longer than in *oligocenum* and *electrum* (length $2.7\text{--}3.2 \times$ width rather than 2.0 or less). Unlike *cockerellae*, the propodeal dorsum of *antiquum* has no median carina or oblique ridges and unlike *electrum*, the clypeal lobe is roundly trapezoidal, the posterior mandibular margin is not emarginate, the head and thorax are densely punctate, and the propodeum has a carina that extends from the spiracle to gastral articulation.

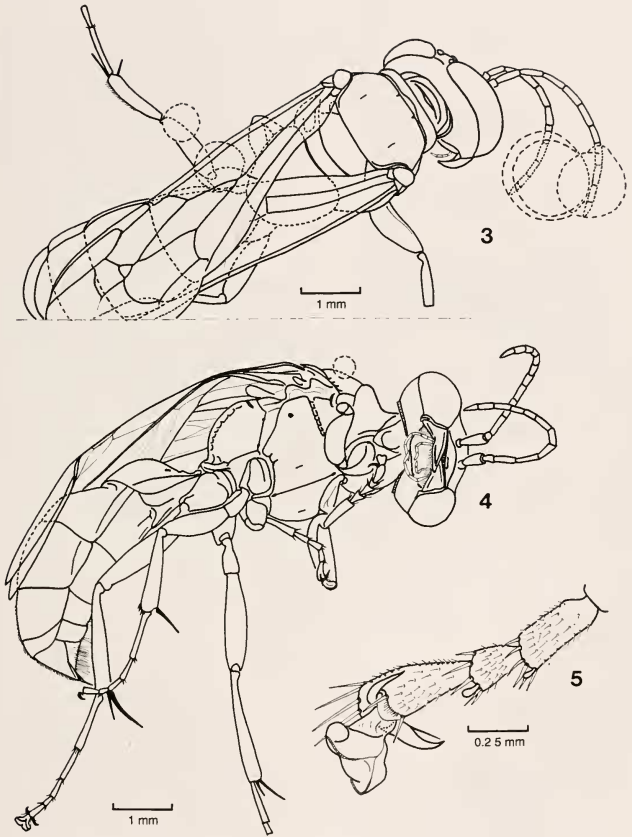
The following details of forewing venation in *antiquum* may also be specific rather than individual:

- height of submarginal cell II less than its petiole (equal to petiole in *cockerellae*, more than petiole in *electrum* and *oligocenum*);
- petiole as long as anterior margin of submarginal cell III (shorter in *electrum* and *oligocenum*, longer in *cockerellae*).
- distance between recurrent vein I and submarginal cell II more than distance between the cell and recurrent vein II (equal in *cockerellae*, recurrent vein I interstitial in *electrum* and *oligocenum*).
- discoidal cell I elongate: maximum length $4.0 \times$ maximum height (2.0 in *cockerellae* and 2.5 in *electrum*, unknown in *oligocenum*);
- M diverging distad of crossvein cu-a (similar in *cockerellae* and *electrum*, slightly proximal of cu-a in *oligocenum*);
- an imaginary line between apex of marginal cell and distal hindcorner of discoidal cell II not crossing submarginal cell III (crossing in *cockerellae* and *electrum*, unknown in *oligocenum*).

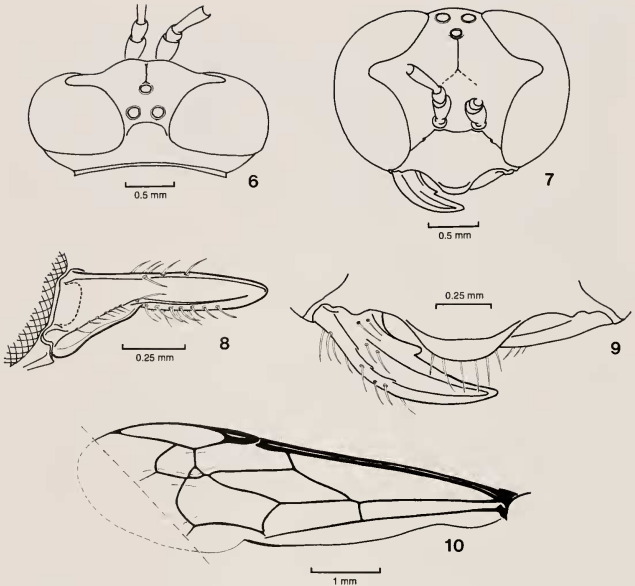
Comparison with Extant Species.—*Pison antiquum* is not identical to any of the Neotropical species revised by Menke (1988). It resembles members of Menke's *euryops* group in having a broad face (eye length

14% less than distance between eye notches), a roundly truncate middle clypeal lobe, a complete episternal sulcus (reaching mesopleural foremargin), a carina present between the propodeal spiracle and gastral articulation, in lacking median and oblique ridges on the propodeal dorsum, and in having a hindcoxa with a well defined inner and a rudimentary outer carina. Unlike species of the *euryops* group, however, *antiquum* has a tooth near the midlength of the inner mandibular margin; a large, transverse pronotal pit; an impunctate tegula; and recurrent vein I ending on submarginal cell I.

Description.—Female (Figs. 1–10). Head transverse in frontal view (Fig. 7), width $1.27 \times$ height. Labrum hidden under clypeus. Mandibular apex acute, inner margin with well defined tooth at midlength (Fig. 9), posterior margin neither notched nor stepped, but condylar ridge meeting adductor ridge at a slightly obtuse angle (Fig. 8); basal (broad) portion with longitudinal sulcus parallel to condylar ridge. Occipital carina interrupted midventrally, almost reaching hypostomal carina. Clypeus moderately convex, median lobe protruding, its free margin arcuate mesally and evenly concave laterally (Figs 7, 9). Frons markedly convex in upper half, with median sulcus below midocellus. Eyes asetose, UID = $0.57 \times$ LID, eye length 14% less than distance between eye notches. Vertex in frontal view convex behind hindocelli (Fig. 7). Ratio of ocellular distance, hindocellar diameter, and interocellar distance = 0.3:1.0:0.6. Distance between hindocelli = $0.55 \times$ distance between mid- and hindocellus. Length of flagellomere I $3.2 \times$ width, of flagellomere $2.7 \times$ width. Punctures uniform, one diameter apart on frons and on scutum anteriorly (puncture diameter about 0.1 hindocellar diameter); finer than that on eye notch, vertex, scutum posteriorly, and scutellum. Eyes glabrous; head, scutum, and scutellum with erect setae (setal length about 0.1–0.2 hindocellar diameter); me-



Figs. 3-5. *Pison antiquum*. 3, dorsal view. 4, ventrolateral view. 5, hindtarsal apex.



Figs. 6-10. *Pison antiquum*. 6, head dorsally. 7, head frontally. 8, mandible, outer side. 9, ventral portion of clypeus and mandible. 10, forewing.

sopleural setae semi-erect, up to 0.25 hind-ocellar diameter long, curving posterad. Pronotum anteriorly with transverse, elliptical pit whose hindmargin is lamelliform, inclined posterad; pronotal hindmargin straight, collar rounded laterally, transversely raised mesally. Metanotal sculpture evanescent. Tegula impunctate. Episternal sulcus extending to mesopleural foremargin. Metapleural flange narrower than ocellar diameter. Propodeum with longitudinal carina between spiracle and gastral base (carina poorly visible from most angles but left carina easily recogniz-

able in dorsal view through left wing); dorsum shiny, minutely punctate (punctures one to two diameters apart), with no median (longitudinal) or oblique carinae and no defined enclosure; hindface with median groove and three transverse ridges above gastral articulation. Forewing hyaline, with three submarginal cells (Fig. 10); media diverging from M+Cu well beyond crossvein cu-a; marginal cell acute apically, extending well beyond vein 2r-m; submarginal cell II: height less than length of petiole; first and second recurrent veins received by submarginal cell I and III

(near its base), respectively. Hamuli of hindwing divided into two groups of six each. Legs of usual shape, minutely setose. Hindcoxal dorsum with complete inner carina; outer carina present only posteriorly. All tibiae with short, sparse spines on outer side. Plantulae present on fore- and midtarsomeres II-IV and hindtarsomeres III-IV; largest plantula on tarsomere IV (Fig. 5). Gaster sessile, moderately constricted between terga I and II. Tergum I not humped posteriorly, with appressed microsetae; terga IV-VI with semi-erect microsetae. Pygidial plate absent. Sternum I with basomedian carina that bifurcates at middle. Length 9.0 mm (amber sample $19.3 \times 7.3 \times 7.0$ mm). Body black, without yellow markings.

Male unknown.

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